RTD UPDATES: Area Studies

Data updates for employees and colleagues of the Resources and Technology Division

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Economic Research Service
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Agricultural Production and Natural Resource Data Linked in Central Nebraska Basins Study

The Area Study project is a data collection and modeling effort designed to assess national policy impacts. The focus is on the development of multi-year, farm-level data that link production activities to environmental characteristics for selected regions. The effort involves the Economic Research Service (ERS), the Soil Conservation Service (SCS), U.S. Geological Survey (USGS), and the National Agricultural Statistics Service (NASS).

A survey was developed to collect detailed information on production technologies, cropping systems, and agricultural practices at both the field and whole farm level. The survey sample points were chosen to correspond with National Resource Inventory (NRI) sample points. SCS conducts an NRI every 5 years, collecting soil, water, and other natural resource data for nearly a million sample sites nationwide. The use of the NRI points thus establishes a link between production activities and related resource characteristics.

The sites chosen were selected from those included in USGS's National Water Quality Assessment Program (NAWQA) and were areas with significant cropland and agricultural chemical use levels. Four areas were chosen in 1991; the Central Nebraska Basins, the White River Basin (Indiana), the Lower Susquehanna Basin (Pennsylvania), and the Mid Columbia Basin (Washington).

This issue of **RTD UPDATES** summarizes the Central Nebraska Basins Area Study survey data. It includes information on conservation practices, chemical use, irrigation methods, and farm type by sales class. In addition, soil characteristics were used to construct a soil leaching potential index for the area.

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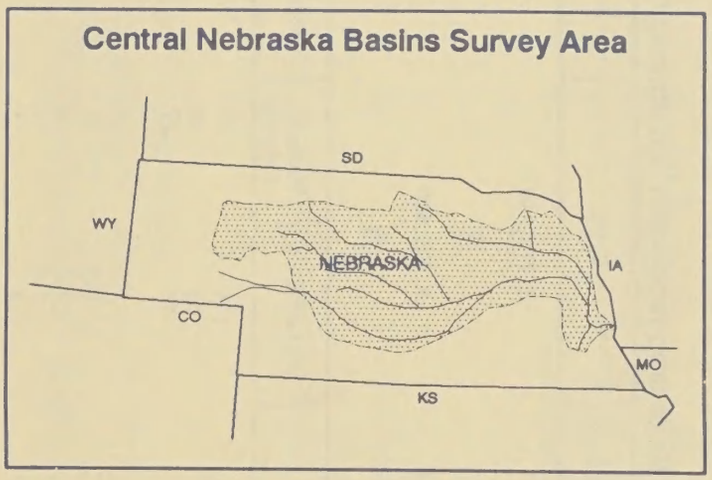
Monthly Data Releases Planned

RTD UPDATES, published by the Resources and Technology Division, is a new series of monthly data highlights relating to agricultural resources, the environment, food safety, global change, and technology. Surveys of farm operators and others knowledgeable about changing agricultural resource conditions provide vital information to the RTD research program and are the source of these data highlights. **RTD UPDATES** gives readers recent data acquisitions, with only minimal interpretation or analysis. This quick release of data should enhance your analytical efforts and decisions. Please contact the individual listed in the text of **RTD UPDATES** on the availability and timing of additional information. Different resource and technology issues are featured each month, depending on availability of data.

Central Nebraska Basins Survey Area



The Central Nebraska Basins study unit is approximately 30,000 square miles of which 45 percent is cropland and 50 percent is rangeland. It includes the Platte River and its tributaries between the confluence of the North and South Platte Rivers in western Nebraska and downstream to the Missouri River at the eastern boundary of Nebraska.

Central Nebraska Basins: Major crop production and chemical use, 1991

Item	Corn	Soybeans	Sorghum	Hay	Pasture
Acres in crop	3,770,140	1,653,920	314,460	917,460	10,145,750
Acres in crop (percent)	20	9	2	5	53
Acres in commodity program	2,893,500	N/A	253,580	980	N/A
Yield per acre (bushels)	121	33	84	1.4 (tons)	N/A

Chemical use	Lbs/acre/yr	Percent of acres	Lbs/acre/yr	Percent of acres	Lbs/acre/yr	Percent of acres	Lbs/acre/yr	Percent of acres	Lbs/acre/yr	Percent of acres
Nitrogen	113	91	39	18	97	86	29	18	36	3
Phosphorous	36	56	36	14	28	27	*	*	*	*
Potash	18	29	22	4	*	*	*	*	*	*
Herbicides:										
2,4-D	0.5	11	*	*	*	*	1.6	2	1.5	5
Alachlor	1.3	26	1.3	21	1.4	23	--	--	*	*
Atrazine	0.8	59	*	*	0.7	81	--	--	*	*
Bentazon	*	*	0.9	5	--	--	--	--	--	--
Bromoxynil	0.3	1	--	--	--	--	--	--	--	--
Butylate	3.5	2	*	*	--	--	--	--	--	--
Chlorimuron-ethyl	--	--	*	*	--	--	--	--	--	--
Clomoazone	--	--	0.5	9	--	--	--	--	--	--
Cyanazine	0.7	17	--	--	--	--	--	--	--	--
Dicamba	0.3	6	*	*	--	--	--	--	0.4	2
Glyphosate	*	*	0.2	11	--	--	--	--	--	--
Imazaquin	--	--	0.1	6	--	--	--	--	--	--
Imazethapyr	*	*	0.1	27	--	--	--	--	--	--
Metolachlor	1.3	23	*	*	1.5	32	--	--	--	--
Metribuzin	*	*	0.1	15	*	*	--	--	--	--
Nicosulfuron	*	*	--	--	--	--	--	--	--	--
Pendimethalin	*	*	0.8	23	--	--	--	--	--	--
Picloram	--	--	--	--	--	--	*	*	0.5	1
Primisulfuron	*	3	--	--	--	--	*	*	--	--
Trifluralin	*	*	0.8	40	*	*	--	--	--	--
Insecticides:										
Bacillus thuringiensis**	9.5	3	--	--	--	--	--	--	--	--
Carbofuran	0.1	8	--	--	--	--	--	--	--	--
Chlorpyrifos	0.3	10	*	*	*	*	--	--	--	--
Fonofos	0.7	6	*	*	*	*	--	--	--	--
Methyl parathion	0.7	10	*	*	--	--	--	--	--	--
Telfluthrin	*	5	--	--	--	--	--	--	--	--
Terbufos	0.1	17	--	--	--	--	--	--	--	--

N/A Indicates not applicable.
-- Indicates no use reported.
* Indicates too few observations for estimation.
** Indicates billion international units (BIUs) per acre.

Central Nebraska Basins: Pest management practices, 1991

Practice	Corn	Soybeans	Sorghum
	Percent of acres in crop		
Type of pest management:			
Rotations	38	76	49
Biological pest control	3	3	0
Pest resistant varieties	15	18	74
Non-pesticidal sprays	1	6	0
Reduced pesticide use strategies	17	10	12
Destroy crop residues	6	5	5
Source of pest management:			
Hired staff	4	1	0
Extension/univ./State/Federal	5	12	20
Chemical dealer	33	27	13
Professional scout	23	7	0

Central Nebraska Basins: Nutrient management practices, 1991

Practice	Corn	Soybeans	Sorghum
	Percent of acres in crop		
Type of nutrient management:			
Soil nitrogen test	43	27	12
Tissue analysis	5	2	0
Factor influencing nitrogen use:			
Fertilizer company recommendation	13	10	2
Consultant recommendation	12	6	0
Crop appearance	10	4	0
Soil/tissue test	28	23	10
Extension service recommendation	3	2	0
Standard amount for crop/rotation	24	46	82
Manure usage	11	11	5

Central Nebraska Basins: Soil conservation practices, 1991

Practice	Corn	Soybeans	Sorghum	Hay	Pasture
	Percent of acres in crop				
Chiseling and subsoiling	20	14	2	N/A	N/A
Conservation tillage	62	82	56	N/A	N/A
Contour farming	12	33	50	N/A	N/A
Crop residue use	57	63	55	N/A	N/A
Grassed waterway	19	36	41	N/A	N/A
Terrace	5	22	41	N/A	N/A
Grazing land protection	N/A	N/A	N/A	8	23
Pasture and hay management	N/A	N/A	N/A	62	57
Planned grazing system	N/A	N/A	N/A	20	68

N/A Indicates not applicable.

Central Nebraska Basins: Farms by sales class and farm type, 1991

Value of agricultural sales	Cash grains	Other field crops	Beef/ hogs/ sheep	Dairy/ poultry/ other livestock
	Percent			
0-$9,999	3	14	2	9
$10,000-$19,999	2	7	2	0
$20,000-$29,999	7	14	3	0
$30,000-$39,999	4	7	4	2
$40,000-$59,999	6	0	7	9
$60,000-$99,999	13	29	14	17
$100,000-$249,999	36	14	31	30
$250,000-$499,999	20	14	16	15
$500,000 and up	10	0	22	19
Share of total	38	1	57	4

Central Nebraska Basins: Irrigation technologies, 1991

Irrigation	Corn	Soybeans	Sorghum	Hay	Pasture	Share of agricultural land
	Percent of acres in crop					Percent
Acres irrigated	63	18	3	8	2	17
Sprinkler system	33	13	0	6	1	10
Flood system	30	4	2	2	0	7
Other system	1	1	1	0	-	-
Fertigation	8	-	0	0	1	2
Chemigation	7	-	0	0	0	1

- Indicates less than one percent.

Central Nebraska Basins: Soil leaching potential index*

Soil leaching potential	Corn	Soybeans	Sorghum	Hay	Pasture	Share of agricultural land
	Percent of acres in crop					Percent
Very high	25	6	3	40	76	53
High	3	-	0	15	2	3
Moderate	54	50	28	27	15	28
Low	8	32	47	13	4	7
Very low	8	11	17	5	3	2
Unknown	2	-	5	0	0	7

- Indicates less than one percent.
Soil leaching potential (SLP) = texture component + organic matter component + pH component
* Potential of soils to leach highly mobile chemicals, based on intrinsic soil properties. Algorithm developed by J.B. Weber and R.L. Warren, North Carolina State University, in Weber, J.B. and R.L. Warren. "Herbicide Behavior in Soils: A Pesticide/Soil Ranking System for Minimizing Groundwater Contamination" Proceedings of the Northeastern Weed Science Society Vol. 46, 1992.

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